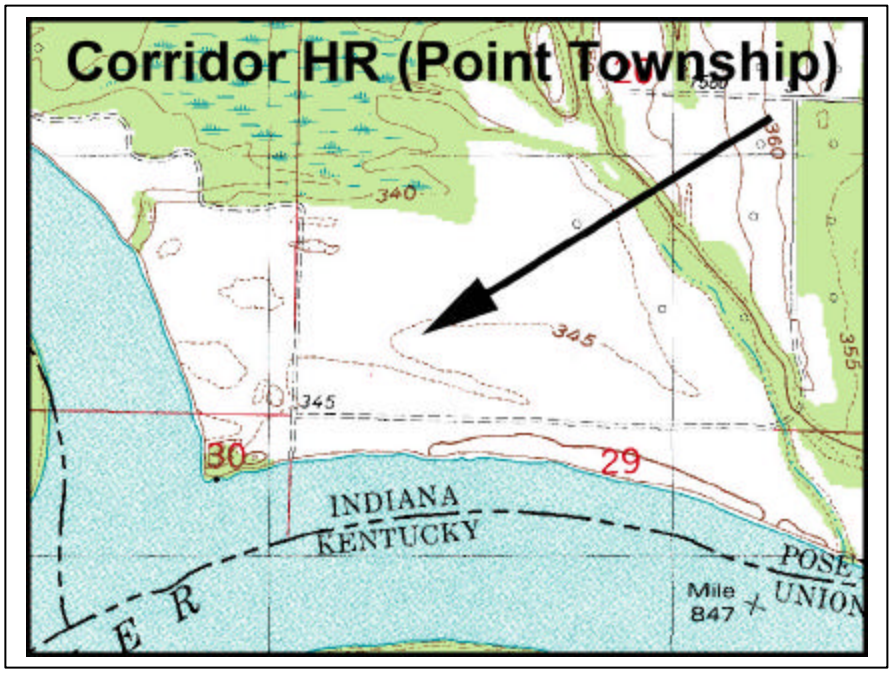
CORRIDOR HABITAT RESTORATION (Point Township) (IN-01)

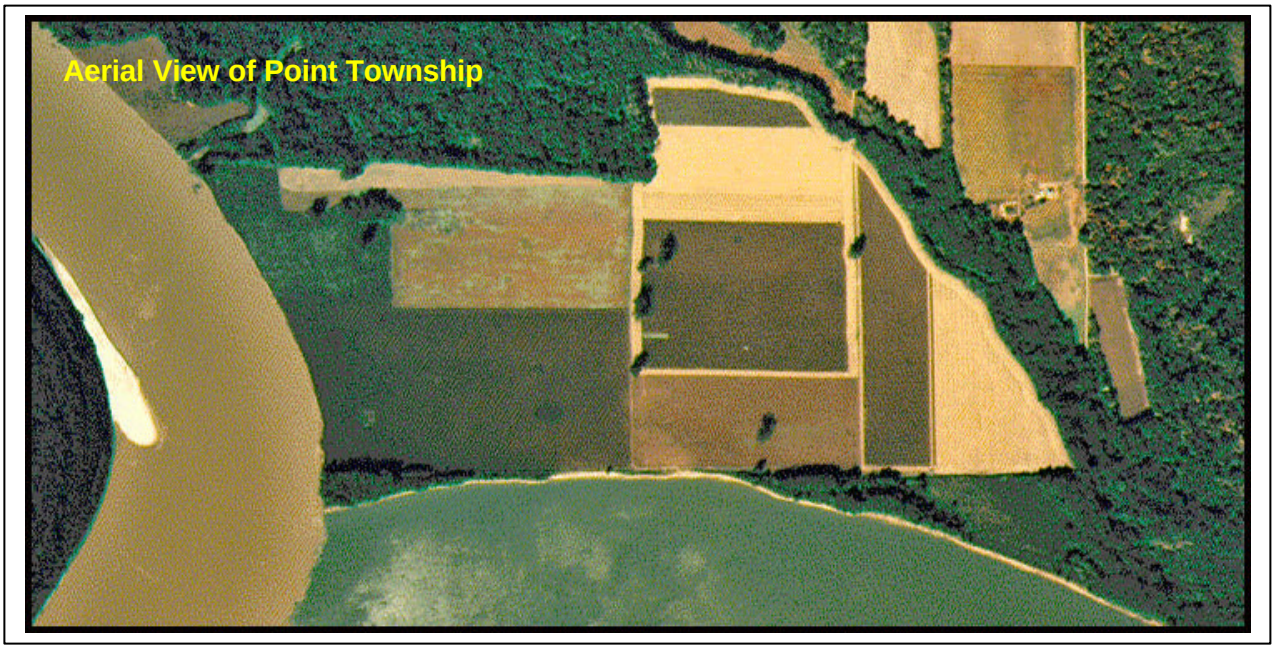
1.0 Location

The proposed Corridor Habitat Restoration project area is located in Posey County, Indiana at the confluence of the Wabash and Ohio Rivers. The project area is located approximately 5 miles west of the town of Uniontown, Kentucky in the Ohio River J.T. Meyers and Smithland Pools. The project site is within the jurisdiction of the Louisville District, U.S. Army Corps of Engineers (USACE).



2.0 Project Goal, Description, and Rationale

The primary goal of the Corridor Habitat Restoration project involves land acquisition. Several tracts of land are presently owned and managed by The Nature Conservancy (TNC), Ducks Unlimited (DU), and the Indiana Department of Natural Resources (INDNR) Division of Nature Preserves. Additional land would be acquired from willing sellers to connect the existing areas and increase management options. Bank stabilization, reforestation, and other habitat management actions may be required on acquired lands.



3.0 Existing Conditions

Terrestrial/Riparian Habitat: The project area consisted primarily of agricultural lands interspersed with stands of bottomland timber. The dominant tree species in the area were silver maple (*Acer saccharinum*), black willow (*Salix nigra*), and box elder (*Acer negundo*). The riparian corridors along the Ohio and Wabash Rivers were highly fragmented or absent altogether.

Aquatic Habitats: The primary aquatic habitats present near the project area were the adjacent Ohio and Wabash Rivers. The site is frequently inundated by overbank flooding from the rivers. The site was drained for agriculture, so agricultural drainage ditches are the primary aquatic resources on the project area.

Wetlands: There are no jurisdictional wetlands on the project area.

Federally-Listed Threatened and Endangered Species: According to the U.S. Fish and Wildlife Service (USFWS), there are 11 federally-listed endangered species and 1 federally-listed threatened species known to occur in Posey County, Indiana. These species are listed on Table 1.

The riparian corridor adjacent to the Ohio River may provide summer roost habitat for the Indiana bat. Preferred tree species would include a mixture of oaks (*Quercus* spp.), silver maple (*Acer saccharinum*), cottonwood (*Populus deltoides*), and shagbark hickory (*Carya ovata*) (INHS, 1996). The riparian corridor would also provide feeding/foraging habitat for the Indiana bat.

Bald eagles may utilize forested areas for roosting/perching habitat and feed in the open water areas. Although bald eagles are known to nest in Posey County, there are no known eagle nests in the project area.

All of the mussels are freshwater species that typically inhabit medium to large river systems. The mussels are typically found in habitats with substrates that range from silt to gravel, and in water depths from 0.5 to 8.0 meters. These species are generally associated with moderate to fast flowing water. There does not appear to be suitable habitat for these species in the project area, although mussels may occur in the adjacent Ohio and Wabash Rivers.

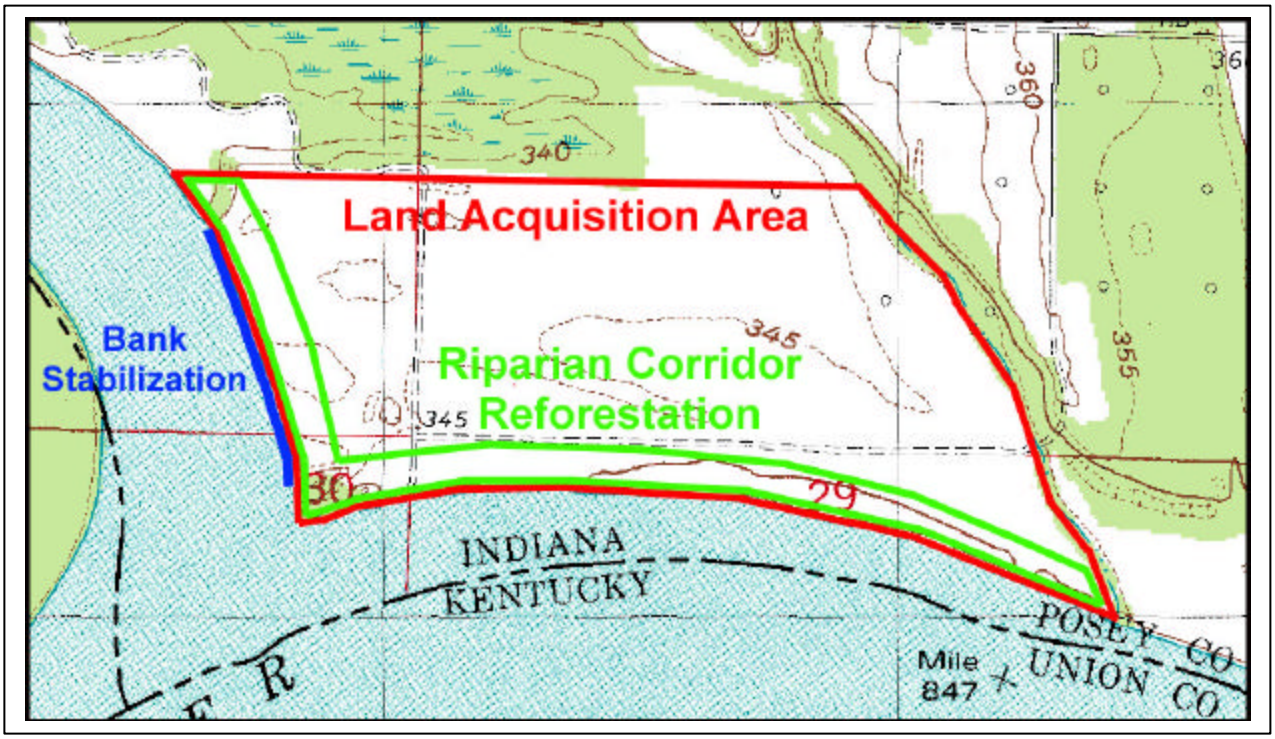
The American burying beetle is generally associated with upland habitats such as grassland prairie, forest edge, and shrubland. It is unlikely that the beetle would be found on the project area.

Table 1. Federally-listed species known to occur in Posey County, Indiana.

Common Name	Scientific Name	Federal Status	Potential Habitat Present
Indiana bat	*Myotis sodalis*	Endangered	Yes
bald eagle	*Haliaeetus leucocephalis*	Threatened	Yes
eastern fanshell pearly mussel	*Cyprogenia stegaria*	Endangered	No
tubercled blossom mussel	*Epioblasma torulosa torulosa*	Endangered	No
pink mucket pearly mussel	*Lampsilis abrupta*	Endangered	No
ring pink mussel	*Obovaria retusa*	Endangered	No
white wartyback mussel	*Plethobasus cicatricosus*	Endangered	No
orange-foot pimpleback mussel	*Plethobasus cooperianus*	Endangered	No
clubshell mussel	*Pleurobema clava*	Endangered	No
rough pigtoe mussel	*Pleurobema plenum*	Endangered	No
fat pocketbook mussel	*Potamilus capax*	Endangered	No
American burying beetle	*Nicrophorus americanus*	Endangered	No

Source: U.S. Fish and Wildlife Service, 1999

4.0 Project Diagram



5.0 Land Acquisition and Reforestation

5.1 Existing Ecological Concern

Several tracts of land in the area are presently owned by other agencies. Acquisition of the Corridor Habitat project area would allow these tracts to be connected.

5.2 Land Acquisition

Land acquisition for the Corridor Habitat (Point Township) project area would be accomplished through purchase of land from willing sellers within the project area. Approximately 234 acres would be acquired through the implementation of this project.

5.3 Reforestation

A riparian corridor 300 feet wide would be reforested along the Ohio and Wabash Rivers. The total acreage of the riparian corridor would be approximately 54 acres. Approximately 50% of the remaining bottomland in project area (90 acres) would be reforested.

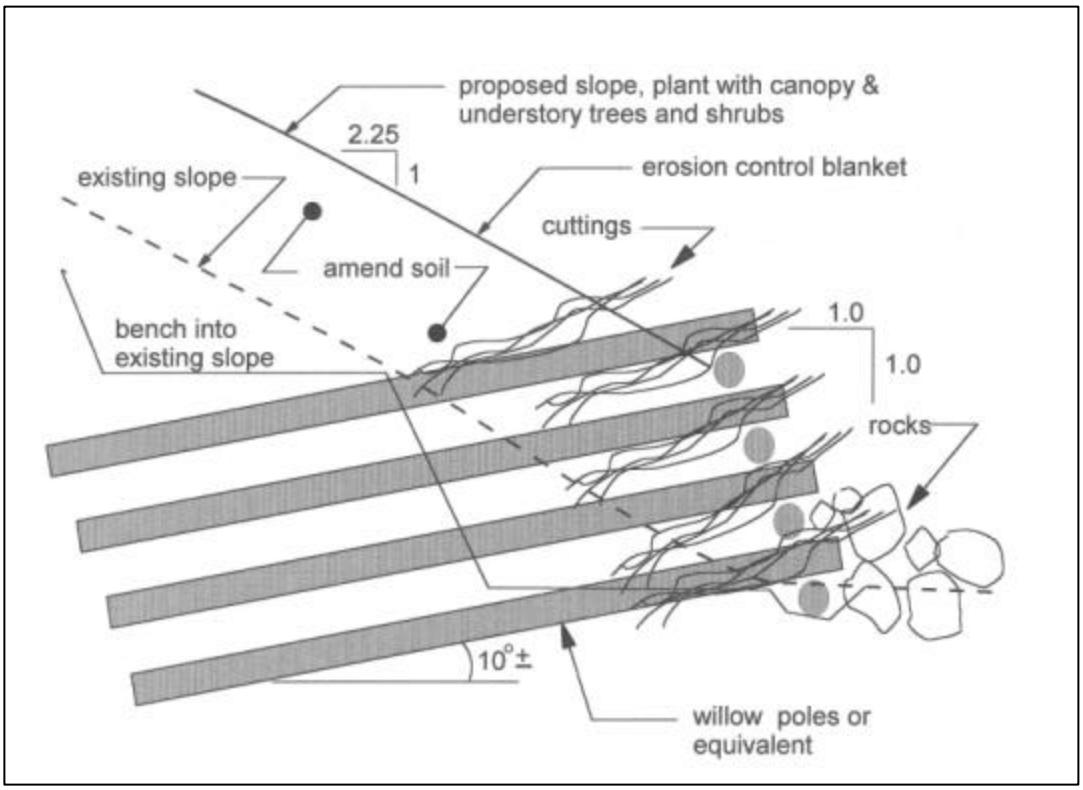
Soil types, hydrology, and terrain position would be the primary factors considered when selecting the tree species to be planted, and a detailed planting design should be developed in order to insure that the planting effort is successful. Typical bottomland species to be planted in the floodplain area would include pin oak (*Quercus palustris*), swamp chestnut oak (*Quercus michauxii*), swamp white oak (*Quercus bicolor*), pecan (*Carya illinoensis*), and shagbark hickory (*Carya ovata*). Aggressive light mast producing species, such as silver maple (*Acer saccharinum*), green ash (*Fraxinus*

pennsylvanica), sycamore (*Platanus occidentalis*), and/or willows (*Salix* spp), would be expected to regenerate naturally.

- Nursery stock for reforestation would be obtained from a State of Indiana Nursery.
- Bare root seedlings would be used and planted at a rate of 300 trees/acre.

5.4 Bank Stabilization

A Living Crib Wall would be used in conjunction with riprap to stabilize the banks along the Wabash River. Large riprap would be randomly place along the bank below the normal pool elevation. Above the normal pool, a living crib wall would be constructed. The living crib wall would provide a more natural repair to the eroding bank. The living crib wall would be constructed with 6-8 inch diameter willow stakes 8 feet long. Live cuttings would be placed between the willow stakes to further enhance revegetation and erosion control.
The figure below provides and example of a living crib wall.



6.0 Cost Estimate (Land Acquisition and Reforestation)

Table 2. Land Acquisition and Reforestation	
Item	**Cost**
Management Plan	$2,500
Land Acquisition (234 acres)	$234,000
Reforestation (144 acres)	$34,500
Bank Stabilization	$757,400
Mobilization	$120,000
TOTAL	**$1,148,400**

7.0 Schedule

Table 3. Project Schedule	
Item	**Time**
Management Plan	1 Year
Land Acquisition	1-5 Years
Reforestation	1-5 Years
Bank Stabilization	1-5 Years
Mobilization	1 Year
TOTAL	**5 Years**

8.0 Expected Ecological Benefits

Terrestrial/Riparian Habitats: Riparian reforestation would stabilize the riverbank and reduce erosion potential. Terrestrial wildlife species would benefit from riparian corridor enhancement. Copperbelly watersnakes occur in the wetland habitat that exists in the floodplain, and additional reforestation could potentially enhance habitat for this species. Reforestation will provide winter habitat for bald eagles and will benefit a number of neotropical migrant bird species

Aquatic Habitats: Aquatic shoreline habitat would be enhanced for Ohio River fishes, and control of erosion could potentially reduce sedimentation problems for freshwater mussel species in the area.

Wetlands: There would be no foreseeable beneficial impacts to jurisdictional wetlands as a result of implementing the proposed project.

Federally-Listed Threatened and Endangered Species: Reforestation of the project site could potentially benefit the Indiana bat and bald eagle. Successful reforestation would provide potential summer roosting habitat for the Indiana bat, and potential roosting/perching habitat for the bald eagle. There would be no foreseeable beneficial impacts to the federally-listed endangered mussel species or the American burying beetle as a result of implementing the proposed project.

Socioeconomic Resources: Socioeconomic resources in the project area would benefit as a result of implementing the proposed project. Increased recreational opportunities such as hunting and wildlife viewing opportunities would result from the project.

9.0 Potential Adverse Environmental Impacts

Terrestrial/Riparian Habitats: There would be no foreseeable adverse impacts to terrestrial or riparian resources as a result of implementing the proposed project.

Aquatic Habitats: There would be no foreseeable adverse impacts to aquatic resources as a result of implementing the proposed project.

Wetlands: There would be no foreseeable adverse impacts to jurisdictional wetlands as a result of implementing the proposed project.

Federally-Listed Threatened and Endangered Species: There would be no foreseeable adverse impacts to federally-listed threatened or endangered species as a result of implementing the proposed project.

Socioeconomic Resources: There would be a potential for minor adverse socioeconomic impacts. Implementation of the proposed project would take some agricultural lands out of production, which could result in decreased opportunities for tenant farming and decreased farm revenues.

10.0 Mitigation

Minor impacts associated with site reforestation may occur during the implementation of this project, however, no significant adverse impacts are expected. The use of best management practices would minimize any potential impacts. No other mitigation would be necessary for this project.

11.0 Preliminary Operation and Maintenance Costs:

Table 4. Operation and Maintenance Costs

Maintenance	Frequency	Cost
Living Crib Wall Maintenance	5 Years	$10,000

12.0 Potential Cost Share Sponsor(s)

- Indiana Department of Natural Resources
- The Nature Conservancy
- Ducks Unlimited
- North American Waterfowl Management Plan
- Private corporations

13.0 Expected Life of the Project

As presently envisioned the Corridor Habitat Restoration (Point Township) project area would be managed in perpetuity for the benefit of natural resources by the Indiana Department of Natural Resources.

14.0 Hazardous, Toxic, and Radiological Waste Considerations

Potential impacts of hazardous, toxic, and radiological waste (HTRW) at the site were visually assessed during a site visit.

Site Inspection Findings.

The site consists of a patchwork of Point Township land north of the Ohio River at river mile 848 in Posey County, Indiana. The nearest town to the Ohio River-Wabash River confluence is Uniontown, Kentucky, which is located along the south bank of Ohio River at river mile 842.5.

The following environmental conditions were considered when conducting the June 29, 1999 project area inspection:

- Suspicious/Unusual Odors;
- Discolored Soil;
- Distressed Vegetation;
- Dirt/Debris Mounds;
- Ground Depressions;
- Oil Staining;
- Above Ground Storage Tanks (ASTs);
- Underground Storage Tanks (USTs);
- Landfills/Wastepiles;
- Impoundments/Lagoons;
- Drum/Container Storage;
- Electrical Transformers;
- Standpipes/Vent pipes;
- Surface Water Discharges;
- Power or Pipelines;
- Mining/Logging; and
- Other

None of the environmental conditions listed above were observed on the project area.

15.0 Property Ownership

Selected data on properties immediately adjacent to or within each concept site was collected from the county courthouse of the respective county of each site. Data collected included map and parcel identification number, property owner's name and mailing address, acreage of the potentially affected parcel, and market value of the parcel. This procedure involved obtaining a plat or parcel map of the site and surrounding area which identified each parcel with a corresponding map and parcel number. The map/parcel identification number was subsequently used to determine the property owner's name and mailing address from records in the County Assessor's or County Auditor's office. Plat/parcel maps were collected for each site.

The market value of each parcel as contained in the property tables reflects the assessed valuation to supposedly market value ratio used in each State for taxation purposes. These assessed values reflect 1998 assessments. The assessed valuation ratio is 33.3 percent for Indiana.

The above ratios were used to approximate the market value of each property. However, in many instances the resultant market value calculated under the above procedure is considerably below the actual value of the land in the real market. Local real estate brokers could provide a more accurate estimate of actual land values.

The collected property data indicate that both public and private lands are adjacent to the Corridor Habitat Restoration (Point Township) area. Private lands may be needed and/or disturbed for this project. The majority of the property under consideration is in public ownership, therefore acquisition, easements, or other agreements will need to be made prior to further progress.

Table 5. Property Characteristics

Site Name: Corridor Habitat Restoration (Point Township)
Location: Posey County, Indiana

Map/Parcel Number	Owner	Mailing Address	Market Value	Acreage
383/06	Otis Allyn (Trustee)	C/o Old National Bank Mt. Vernon, IN. 47620	$2,900	16.75
383/07	Posey County Farms, Inc.	C/o Duane Collier 11700 Bonebank Road Mr. Vernon, IN. 47620	$21,800	133.65
383/08	Otis Allyn (Trustee)	C/o Old National Bank Mt. Vernon, IN. 47620	$7,500	40.00
384/01	Otis Allyn (Trustee)	C/o Old National Bank Mt. Vernon, IN. 47620	$16,500	84.50
384/05	David Lichtenstein	C/o Old National Bank Mt. Verson, IN. 47620	$29,700	80.00
384/06	Egbert Hamsley, etal	1109 Leona Road Lenoir City, TN. 37772	$28,500	98.50
395/01	United States Govt.			60.75
395/02	United States Govt.			30.00
395/03	United States Govt.			30.45
396/01	United States Govt.			60.00

* Denotes improvements on property.

16.0 References

INHS, 1996	Illinois Natural History Survey Reports, March-April 1996. Survey Document #2152. Center for Biodiversity (J. Hofmann).
USFWS, 1999	U.S. Fish and Wildlife Service. Federally endangered, threatened, and proposed species, Indiana.

APPENDIX A Threatened & Endangered Species

APPENDIX B Plan Formulation and Incremental Analysis Checklist

Project Site Location: The proposed Corridor Habitat Restoration project area is located in Posey County, Indiana at the confluence of the Wabash and Ohio Rivers. The project area is located approximately 5 miles west of the town of Uniontown, Kentucky in the Ohio River J.T. Meyers and Smithland Pools. The project site is within the jurisdiction of the Louisville District, U.S. Army Corps of Engineers (USACE).

Description of Plan selected: The primary goal of the Corridor Habitat Restoration project involves land acquisition. Several tracts of land are presently owned and managed by The Nature Conservancy (TNC), Ducks Unlimited (DU), and the Indiana Department of Natural Resources (INDNR) Division of Nature Preserves. Additional land would be acquired from willing sellers to connect the existing areas and increase management options. Reforestation and other habitat management actions may be required on acquired lands.

Alternatives of the Selected Plan:

Smaller Size Plans Possible? Yes and description

Reduce the amount of the land acquisition and the reforestation area.

Larger Size Plan Possible? Yes and description

Increase the amount of the land acquisition and the reforestation area.

Other alternatives? No

Restore/Enhance/Protect Terrestrial Habitats? Yes **Objective numbers met** T1,T3

Restore, Enhance, & Protect Wetlands? Yes **Objective numbers met** W1

Restore/Enhance/Protect Aquatic Habitats? Yes **Objective numbers met** A8

Type species benefited: Resident and migratory wildlife and riverine fishes.

Endangered species benefited: Indiana bat and bald eagle.

Can estimated amount of habitat units be determined: 54 acres riparian corridor reforestation, 90 acres bottomland reforestation, 1800 feet bank stabilization

Plan acceptable to Resources Agencies?

U.S. Fish & Wildlife Service?

State Department of Natural Resources? Indiana Dept. of Natural Resources

Plan considered complete? Yes **Connected to other plans for restoration?** No

Real Estate owned by State Agency? No **Federal Agency?** Yes
Real Estate privately owned? Yes
If privately owned, what is status of future acquisition Unknown

Does this plan contribute significantly to the ecosystem structure or function requiring restoration? What goal or values does it meet in the Ecosystem Restoration Plan?

Yes This plan increased the amount of forested habitat in the floodplain and increased habitat diveristy.

Is this restoration plan a part of restoration projects planned by other agencies? (i.e. North American Waterfowl Management Plan, etc.)

Unknown

In agencies opinion is the plan the most cost effective plan that can be implemented at this location?

Can this plan be implemented more cost effectively by another agency or institution?
Yes / No
Who:

From an incremental cost basis are there any features in this plan that would make the project more expensive than a typical project of the same nature? For embayment type plans is there excessive haul distance to disposal site? More expensive type disposal? Spoil that requires special handling/disposal?

Potential Project Sponsor:

Government Entity:_____
Non-government Entity _____

Corps Contractor _____Date_____

U.S. Fish & Wildlife Representative _____Date_____

State Agency Representative _____Date _____

U.S. Army Corps of Engineers Representative _____Date _____

Terrestrial Habitat Objectives

T1 Riparian Corridors

T2 Islands

T3 Floodplains

T4 Other unique habitats (canebrakes, river bluffs, etc.)

Wetland Habitat Objectives

W1 Forested Wetlands: Bottomland Hardwoods

W2 Forested Wetlands: Cypress/Tupelo Swamps and other unique forested wetlands

W3 Scrub/Shrub Emergent Wetlands: isolated from the river except during high water and contiguous (includes scrub/shrub wetlands in embayments and island sloughs)

Aquatic Habitat Objectives

A1 Backwaters (sloughs, embayments, oxbows, bayous, etc.)

A2 Riverine submerged and aquatic vegetation

A3 Sand and gravel bars

A4 Riffles/Runs (tailwaters)

A5 Pools (deep water, slow velocity, soft substrate)

A6 Side Channel/Back Channel Habitat

A7 Fish Passage

A8 Riparian Enhancement/Protection

APPENDIX C Micro Computer-Aided Cost Engineering System (MCACES)